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EASYLONGER ES400 AIR

EASYLONGER ES400 AIR CPAP Battery User Manual

Model: ES400 AIR (GP48 AIR)

1. Introduction

Thank you for choosing the EASYLONGER ES400 AIR CPAP Battery. This portable power supply is designed to provide reliable and uninterrupted power for your CPAP machine and other electronic devices, whether you are camping, traveling, or experiencing a power outage. With its 148Wh capacity and multiple output ports, the ES400 AIR ensures you can maintain your therapy and stay connected wherever you are. This manual provides essential information for the safe and efficient use of your device.

2. Safety Information

Please read all safety instructions carefully before using the EASYLONGER ES400 AIR. Failure to follow these instructions may result in electric shock, fire, or serious injury.

- Do not expose the battery to extreme temperatures, direct sunlight, or high humidity.
- Do not disassemble, repair, or modify the device. Refer all servicing to qualified personnel.
- Keep the device away from water and flammable liquids.
- Ensure proper ventilation during use and charging to prevent overheating.
- The built-in Battery Management System (BMS) protects against over-charging, over-discharging, over-current, and short-circuits.
- **Airline Travel:** The ES400 AIR has a 148Wh capacity. While generally considered airline-friendly, prior approval from the airline is required before boarding. Always carry the battery in your carry-on luggage; **do not** place it in checked baggage.
- **CPAP Usage:** Using CPAP machines with humidifiers and heated tubes significantly increases power consumption and reduces battery runtime. For extended use, it is recommended to turn off these features.

3. Package Contents

Verify that all items are present in your package:

- 1 x 148Wh CPAP Battery (EASYLONGER ES400 AIR)
- 1 x AC Adapter

- 1 x DC Cable for ResMed S9
- 1 x DC Cable for AirSense 10/AirCurve 10
- 1 x DC Cable for AirMini/AirSense 11
- 1 x DC Cable for Philips DreamStation
- 1 x USB A-C Cable
- 1 x Carrying Bag
- 1 x User Manual (this document)

4. Product Overview

Figure 4.1: Front view of the EASYLONGER ES400 AIR CPAP Battery, highlighting the DC IN/OUT, USB-C OUT, USB-A OUT ports, and the digital display.

The EASYLONGER ES400 AIR is a compact and robust power bank designed for portability and durability. It features a clear digital display showing output voltage and battery percentage. The device includes multiple output ports to accommodate various devices:

- **DC IN/OUT Port:** Used for charging the battery and for connecting CPAP machines via the included DC cables. Supports adjustable voltage output (12V, 16.5V, 20V, 24V).
- **USB-C OUT Port:** 30W Power Delivery (PD) for fast charging compatible devices like laptops, tablets, and smartphones.
- **USB-A OUT Port:** 18W Power Delivery (PD) for charging smartphones and other USB-powered devices.
- **DC 12V OUT (Car Socket) Port:** 160W output for devices requiring a car cigarette lighter connection, such as air pumps or car refrigerators.

5. Setup

Before first use, fully charge your EASYLONGER ES400 AIR battery.

5.1 Initial Charging

Connect the included AC adapter to the DC IN/OUT port on the battery and plug it into a wall outlet. The digital display will show the charging progress. A full charge typically takes 4-5 hours.

5.2 Connecting to CPAP Machine

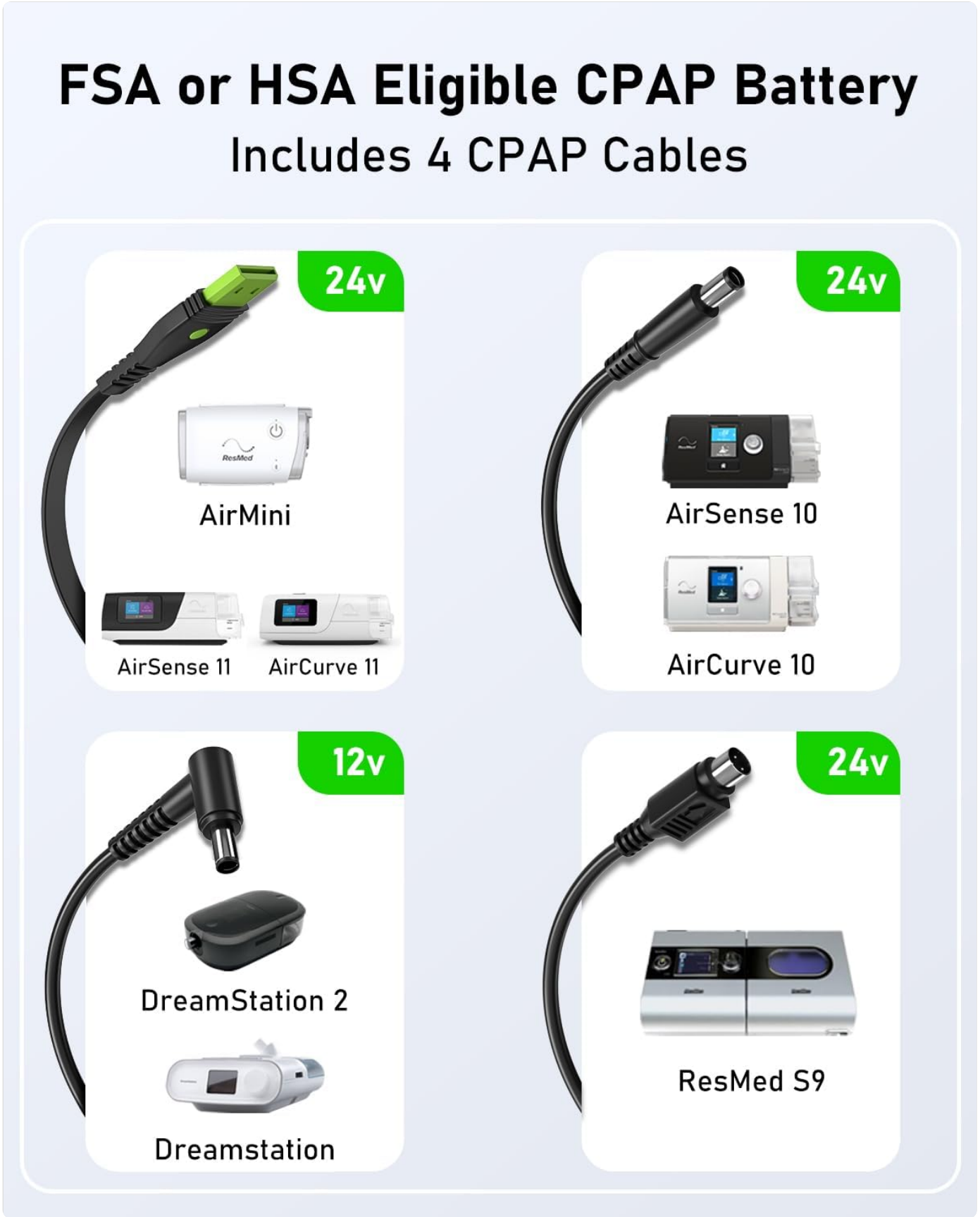

Figure 5.1: Included CPAP cables for various machine models.

Figure 5.2: Options for powering your CPAP machine.

The ES400 AIR comes with 4 specific DC cables for direct connection to popular CPAP models. Before connecting, ensure the correct voltage is selected on the battery to match your CPAP machine's requirements (12V, 16.5V, 20V, or 24V). Refer to your CPAP machine's manual for its specific voltage.

1. **Direct Connection (Recommended):** Use one of the included DC cables that matches your CPAP machine. Connect one end to the battery's DC IN/OUT port and the other to your CPAP machine.

2. **Using a Cigarette Lighter Cable with a Voltage Converter (Sold Separately):**For CPAP machines not directly supported by the included cables, you may use a cigarette lighter cable with an appropriate voltage converter connected to the battery's DC 12V OUT (car socket) port.
3. **Using an Inverter (Sold Separately):** For broader compatibility, an AC inverter can be connected to the battery's DC 12V OUT (car socket) port, allowing you to power your CPAP machine using its standard AC adapter. Note that using an inverter can decrease overall runtime due to energy conversion loss.

6. Operating

6.1 Powering On/Off

Press and hold the power button for a few seconds to turn the unit on or off. The digital display will illuminate, showing the battery level and output voltage.

6.2 Using Output Ports

- **DC IN/OUT:** After setting the correct voltage, connect your CPAP machine. The display will show the active output voltage.
- **USB-C OUT & USB-A OUT:** Simply plug your USB devices into the respective ports. These ports are always on when the unit is powered, and the LED display will light up once a device is plugged in.
- **DC 12V OUT (Car Socket):** Plug in your 12V car-compatible devices. This port is also always on when the unit is powered.

6.3 Pass-Through Charging

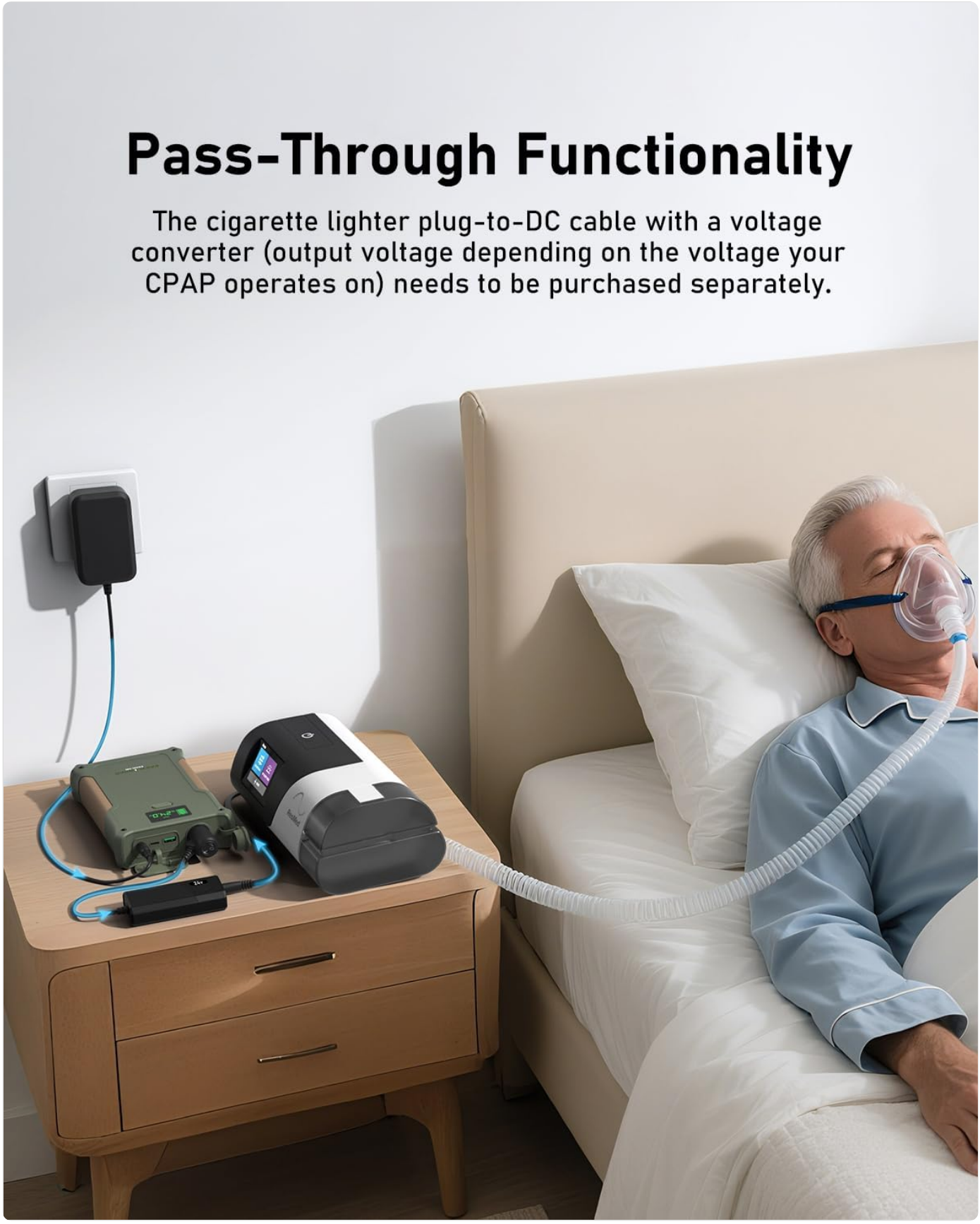

Figure 6.1: Pass-Through Charging in action.

The ES400 AIR supports pass-through charging, allowing you to charge the battery while simultaneously powering your CPAP machine or other devices. This feature ensures uninterrupted power, acting as a backup power supply in case of a power outage. For CPAP machines, this functionality works directly with the included DC cables. If using a voltage converter or inverter, ensure they also support pass-through functionality.

7. Charging Options

Figure 7.1: Three recharging options for the ES400 AIR.

Your EASYLONGER ES400 AIR offers versatile recharging methods:

- **AC Adapter (Included):** Connect the 40W AC adapter to a standard wall outlet. Fully charges in approximately 4-5 hours.
- **Car Charger (Not Included):** Use a compatible car charger plugged into your vehicle's 12V cigarette lighter socket. Fully charges in approximately 2-3 hours.

- **Solar Panel (Not Included):** The battery features built-in MPPT technology, supporting inputs up to 72W. An 80W solar panel can fully charge the battery in approximately 3-4 hours, depending on sunlight conditions.

8. Compatibility & Runtime

8.1 CPAP Machine Compatibility

Figure 8.1: Direct compatibility with included cables.

Figure 8.2: Broad compatibility with an inverter (sold separately).

The ES400 AIR is designed to be compatible with most CPAP machines on the market. The included DC cables provide direct compatibility with:

- ResMed AirSense 11, AirSense 10, AirCurve 10, AirMini, ResMed S9
- Philips DreamStation, DreamStation 2

For other CPAP models, compatibility can be achieved using a separate voltage converter or an AC inverter connected to the battery's 12V car socket output.

8.2 Factors Affecting Runtime

Figure 8.3: Impact of humidifier and heated tube on runtime.

Figure 8.4: Comprehensive list of factors affecting battery duration.

The actual runtime of the ES400 AIR when powering a CPAP machine can vary significantly based on several factors:

- **Humidifier and Heated Tube Settings:** These features consume significant power. Turning them off or setting them to zero will greatly extend battery life.
- **CPAP Pressure Settings:** Higher pressure settings generally require more power.
- **Ramp Up Function:** Using this feature can affect power consumption.
- **Altitude Compensation:** If enabled, this feature may impact power usage.
- **Mask Leaks:** Significant mask leaks can cause the CPAP machine to work harder, consuming more power.
- **Machine Type:** Different CPAP models have varying power efficiencies.
- **Use of Inverter:** Using an AC inverter introduces energy loss, reducing overall runtime compared to direct DC connection.
- **Ambient Temperature:** Battery performance can be affected by extreme temperatures.

Estimated Runtimes (Humidification and Heating OFF, Ambient Temperature: 25°C / 77°F):

CPAP Model	Pressure (cm H_2O)	Estimated Run Time
ResMed AirMini	8	18 hrs
ResMed AirMini	12	16 hrs
ResMed AirMini	16	12 hrs
AirSense 11	6-8	14 hrs
AirSense 11	10-12	12 hrs
AirSense 11	14-16	9 hrs
AirSense 10	6-8	14 hrs
AirSense 10	10-12	12 hrs
AirSense 10	14-16	9 hrs
DreamStation 2	8	15 hrs

CPAP Model	Pressure (cm H_2O)	Estimated Run Time
DreamStation 2	12	13 hrs
DreamStation 2	16	9 hrs

9. Maintenance

Proper maintenance ensures the longevity and optimal performance of your EASYLONGER ES400 AIR battery.

- **Cleaning:** Use a soft, dry cloth to clean the exterior of the device. Do not use abrasive cleaners or solvents.
- **Storage:** Store the battery in a cool, dry place away from direct sunlight and extreme temperatures. If storing for extended periods, charge the battery to approximately 50-70% every 3-6 months to maintain battery health.
- **Battery Care:** Avoid fully discharging the battery frequently, as this can reduce its lifespan. Recharge the battery as soon as possible after use.

10. Troubleshooting

If you encounter issues with your EASYLONGER ES400 AIR, refer to the following common troubleshooting steps:

Problem	Possible Cause	Solution
Battery not charging	AC adapter not connected properly; Faulty adapter or cable; Battery too hot/cold.	Ensure all connections are secure. Try a different outlet. Allow battery to reach room temperature. Contact support if issue persists.
Device not powering CPAP	Incorrect voltage setting; Incorrect DC cable used; CPAP machine power requirements too high (e.g., humidifier ON); Battery discharged.	Verify the voltage setting matches your CPAP. Ensure the correct DC cable is used. Turn off humidifier/heated tube. Recharge the battery.
Short runtime	Humidifier/heated tube ON; High CPAP pressure; Mask leaks; Using an inverter.	Turn off humidifier/heated tube. Check for mask leaks. Consider direct DC connection instead of inverter.
USB ports not working	Device not powered on; Cable issue; Device not compatible.	Ensure the battery is powered on. Try a different USB cable. Check device compatibility with USB-C PD or USB-A.

For more detailed troubleshooting or issues not listed here, please refer to the full User Manual PDF available online or contact EASYLONGER customer support.

11. Specifications

Feature	Detail
Model Number	GP48 AIR (ES400 AIR)
Battery Type	Lithium Ion
Capacity	148Wh / 40000mAh
Product Dimensions	7.28 x 4.76 x 1.57 inches
Item Weight	2.05 pounds

Feature	Detail
DC IN/OUT Voltage	12V, 16.5V, 20V, 24V (3.5A)
USB-C Output	30W Power Delivery (PD) Max
USB-A Output	18W Power Delivery (PD) Max
DC 12V OUT (Car Socket)	160W Max
Recharge Time (AC Adapter)	4-5 hours
Recharge Time (Car Charger)	2-3 hours
Recharge Time (Solar Panel)	3-4 hours (with 80W panel)
Special Features	Travel, Over Voltage Protection, Fast Charging, Built-in BMS
Manufacturer	Dongguan Yihang Electronic Co., Ltd
Date First Available	May 9, 2023

12. Warranty and Support

EASYLONGER products are manufactured with high-quality materials and undergo rigorous testing. For warranty information and customer support, please refer to the warranty card included in your package or visit the official EASYLONGER website. If you have any questions or require assistance, do not hesitate to contact our customer service team.

Online Resources:

- User Guide (PDF): Download User Guide
- User Manual (PDF): Download User Manual
- EASYLONGER Store: Visit EASYLONGER Store on Amazon

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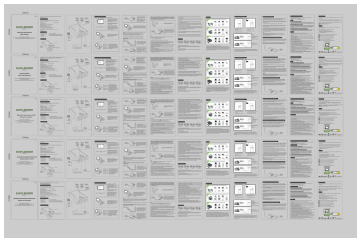
Related Documents - ES400 AIR

	EASYLONGER ES960 CPAP Battery Backup Power Supply User Manual User manual for the EASYLONGER ES960 CPAP Battery Backup Power Supply, offering 297.6Wh capacity for AirSense, AirCurve, AirMini, and DreamStation devices. Ideal for emergency power and outdoor use.
	EASYLONGER EL240 Laptop Power Bank User Manual User manual for the EASYLONGER EL240 Laptop Power Bank, detailing its specifications, features, charging instructions for laptops, CPAPs, and other devices, as well as troubleshooting and warranty information.

	[EASYLONGER ES400 AIR Portable Power Station User Manual] User manual for the EASYLONGER ES400 AIR portable power station, detailing its specifications, package contents, charging methods, usage instructions for various ports (USB, USB-C, DC, 12V cigar lighter), part identification, usage notes, FAQs, and warranty information.
	[ResMed Air Solutions Troubleshooting Guide: Optimize CPAP Therapy] A comprehensive troubleshooting guide for ResMed Air Solutions CPAP devices, covering mask leaks, comfort issues, therapy adjustments, and device FAQs to help users achieve optimal sleep therapy.
	[ResMed ClimateLineAir and ClimateLineAir Oxy User Guide] User guide for ResMed's ClimateLineAir and ClimateLineAir Oxy heated air tubing, detailing setup, intended use, Climate Control features, cleaning, troubleshooting, and technical specifications.
	[ES960 PRO CPAP Battery Backup User Manual] User manual for the EASYLONGER ES960 PRO CPAP Battery Backup, detailing safety information, product overview, specifications, operation instructions, charging methods, CPAP usage, troubleshooting, maintenance, and warranty.

Documents - EASYLONGER – ES400 AIR



[pdf] User Manual Specifications Dimension Guide

GP48 AIR A4 20240715 Administrator EASYLONGER ES400 Instruction manuals User Manual for Amazon July 15 2024 v 1740975445 cdn shopify s files 1 0566 9604 5651 |||

180mm 180mm 180mm 180mm 180mm 120mm EN **ES400 AIR** CPAP BATTERY BACKUP USER S MANUAL - Easy Charge, Longer Power For more information visit our support page at www.easylonger.com Lifetime Customer Support: support easylonger.com 120mm DE **ES400 AIR** CPAP BATTERIE BENUTZERHANDBUCH - Easy Charge, Lo...

lang:de score:51 filesize: 13.38 M page_count: 1 document date: 2024-07-15

EASYLONGER

Request for In-Flight Use of EASYLONGER ES400 AIR CPAP Battery (148Wh)

Date: [Insert Date]

To: Special Assistance Department
American Airlines (AA)

Dear Sir/Madam,

I am writing to formally request approval to carry and use my CPAP (Continuous Positive Airway Pressure) device powered by the EASYLONGER ES400 AIR CPAP battery (148Wh) during my upcoming flight with American Airlines. This request is made based on my medical condition, severe obstructive sleep APNEA, which necessitates continuous use of the CPAP device to maintain normal respiratory function and avoid potentially life-threatening complications.

Flight Information:
- Passenger Name: [Your Full Name]
- Booking Reference: [Booking Number]
- Flight Number: [Flight Number]
- Date of Departure: [Departure Date]
- Route: [Departure Airport] – [Arrival Airport]

Medical Necessity:
I have been diagnosed with severe obstructive sleep APNEA requiring the continuous use of a CPAP device during sleep, regardless of the environment. Without the CPAP, I am at risk of:
- Respiratory distress due to airway obstruction
- HYPOXEMIA leading to reduced oxygen levels in the blood
- Cardiac ARRHYTHMIAS which can cause serious heart complications

In-flight use of my CPAP device ensures my safety and ability to breathe properly, avoiding any

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WPS 1681267298 Flight Travel letter for ES400 AIR Instruction manuals EASYLONGER Letter For v 1735006454 cdn shopify s files 1 0566 9604 5651 |||

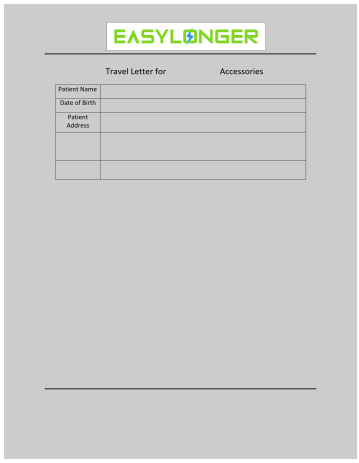
Request for In-Flight Use of EASYLONGER **ES400 AIR** CPAP Battery 148Wh Date: Insert Date To: Special Assistance Department American Airlines AA Dear Sir/Madam, I am writing to formally request approval to carry and use my CPAP Continuous Positive Airway Pressure device powered by the EASYLONGE...

lang:en score:41 filesize: 55.84 K page_count: 3 document date: 2024-12-24

EASYLONGER ES400 AIR Portable Power Station User Manual

User manual for the EASYLONGER ES400 AIR portable power station, detailing its specifications, package contents, charging methods, usage instructions for various ports (USB, USB-C, DC, 12V cigar lighter), part identification, usage notes, FAQs, and warranty information.

lang:fr score:38 filesize: 708.84 K page_count: 1 document date: 2022-12-15


EASYLONGER

Travel Letter for Accessories

Patient Name	
Date of Birth	
Patient Address	

[pdf] Accessories

Anton Flight Travel Form for ES400 AIR Instruction manuals EASYLONGER Letter For 148Wh v 1735006454 cdn shopify s files 1 0566 9604 5651 |||

Travel Letter for EASYLONGER Accessories Patient Name Date of Birth Patient Address EASYLONGER Battery Model Rated Capacity The person mentioned above has been diagnosed with Obstructive Sleep Apnea. This person has been prescribed and is required to use a Continuous Positive Airway Pressure CPAP ...

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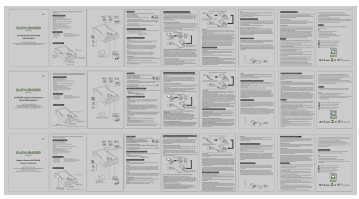

[pdf] User Manual Specifications Diagram

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EN **ES400 AIR** OUTDOOR BATTERY PACK USER S MANUAL - Easy Charge,Longer Power For more information visit our support page at www.easylonger.com Lifetime Customer Support: support easylonger.com Thanks for choosing our product, Please read the manual carefully before use Technical Specifications Model...

lang:en score:23 filesize: 623.1 K page_count: 1 document date: 2023-08-14

[pdf] User Manual Diagram

110W A1 20240620 Administrator Portability Suitable for outdoor activities camping travel etc easy to carry and store ○ Flexibility Adjustable angle position optimal C1WasNc0AyLm media amazon images I C1WasNc0AyL |||

55 45 35 210mm 140mm EN Product diagram ESP110 110W Solar Panel USER S MANUAL - Easy Charge, Lo ... light, the charging time for EASYLONGER devices is as follows: ES960: 4.2 hours ES720: 3.6 hours **ES400 AIR**: 2.8 hours Maintenance and care Regular inspection and maintenance are required to extend...

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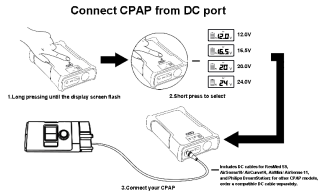

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EASYLONGER CPAP Battery ES400 AIR 148Wh Backup Power Supply for ResMed S9 AirSense 10 AirCurve 11 AirMini Philips DreamStation Camping Outdoor Brown GP48 User Guide Dongguan Yihang Electronic Co Ltd B0CS77MVLG B0C4PKWD36 91RafxSB mL m media amazon images I |||

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lang:en score:22 filesize: 526.42 K page_count: 2 document date: 2023-08-14